

Precision Pressure Transducer-Ruggedized PPTR

Honeywell's PPTR offers a rugged, smart pressure transducer for use in harsh environments. It combines proven silicon sensor technology with microprocessor-based signal conditioning to provide an extremely smart pressure transducer. Designed with a hermetically sealed, stainless steel construction, the PPTR operates in severe vibration, thermal and mechanical shock environments. The PPTR has many software features that support a wide range of applications.

APPLICATIONS:

- Engine Test Stands
- Flight Testing
- Water Depth
- Unmanned Underwater Vehicles
- Instrumentation and Analytical Equipment
- Process Control
- Research and Development

±0.10%
Accuracy from
-40 to 85°C



Hermetically
Sealed

Digital and
Analog

CE Qualified
ISO-9001
ISO-14001

FEATURES AND BENEFITS

High Accuracy

±0.10% FS typical accuracy
from -40 to 85°C

- ▶ **Simplifies System Design** - No additional signal compensation needed to gain the benefits of a very accurate sensor.

Smart, Digital Sensing and Control

- ▶ **Efficient Data Acquisition** - Connect up to 89 units on a multidrop bus using built-in RS-485 capability.
- Easy Interface** - Directly connects to PC via communication ports.
- Closes the Loop** - Smart PPTR makes control decisions.

Versatile and Configurable

- ▶ **Works with existing and new systems.** - All units have 0-5V analog and either RS-232 or RS-485 digital outputs.
- Isolation diaphragms handle most media** - harsh gases or liquids.
- Rugged Design** - Operates in severe vibration, thermal, and mechanical shock environments.
- Optimizes Output** - User-configurable pressure units, sampling, update rate.
- Flags Problems** - Internal diagnostics set flags, provide alarms.

User Selectable Software Features

- ▶ Baud Rate, Parity Setting, Continuous Broadcast, ASCII or Binary Output, Sensor Temperature Output (°C or °F), Deadband, Sensitivity, Tare Value, Configurable Analog Output

SPECIFICATIONS

Performance Specifications⁽¹⁾

Accuracy: (from -40 to 85°C)

Digital: ±0.10% FS Typ., ±0.20% FS Max.⁽²⁾

Analog: ±0.12% FS Typ., ±0.24% FS Max.⁽²⁾

Temperature: ±1°C (at sensing element)

Temperature Range:

Operating -40 to 85°C (-40 to 185°F)

Storage: -55 to 90°C (-67 to 194°F)

Sample Rate⁽³⁾: 8.33ms to 51.2 min

Resolution:

Digital: Up to 0.0011% FS

Analog: 1.22mV steps (12 bits)

Response Delay:

(1000/update rate) +1ms, minimum 17ms

Mechanical Specifications

Pressure Ranges and Type:

See Ordering Information

Pressure Units⁽⁴⁾: atm, bar, cmwc, ftwc, hPa, inHg, inwc, kg/cm², KPa, mBar, mmHg, MPa, mwc, psi, user, loom, pfs

Media Compatibility: Suitable for media compatible with 316 stainless steel (Consult factory for Hastelloy diaphragm.)

Weight: 14 oz. (397 gm) 6-pin connector

22 oz. (624 gm) NPT w/pigtail style

Electrical Specifications

Output:

RS-232 Digital w/0-5V Analog⁽⁵⁾

RS-485 Digital w/0-5V Analog⁽⁵⁾

Power Requirements:

Supply Voltage: 6 to 30 VDC

Operating Current: 19-27mA

Baud Rate⁽⁵⁾: 1200, 2400, 4800, 9600,

14400, 19200, 28800

Bus Addressing⁽⁵⁾: Address up to 89 units

Environmental Features⁽³⁾⁽⁴⁾

Overpressure: 3x FS, maximum 6000psi

Burst Pressure: 3x FS, maximum 8500psi

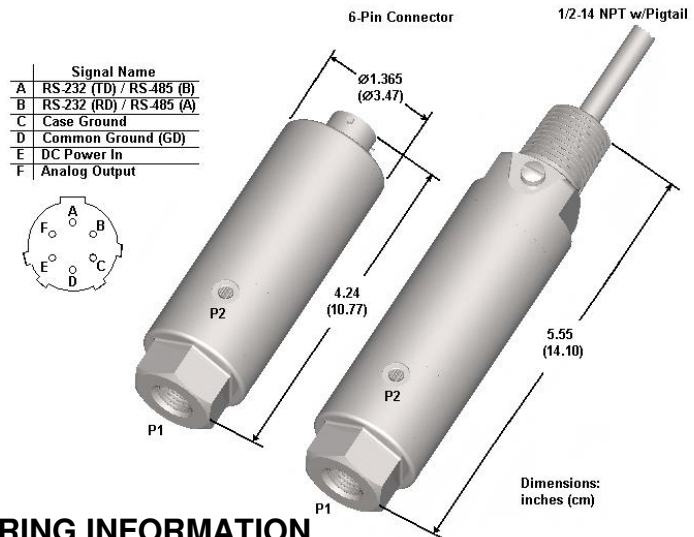
Mechanical Shock: 1500g, 0.5ms half sine

Temp Shock: 24 1-hour cycles, -40 to 85°C

Vibration: 0.5in or 20G's, 20Hz – 2K Hz

(1) Accuracy is the sum of worst case linearity, repeatability, hysteresis, thermal effects and calibration errors from -40 to 85°C. Typical is the average of absolute value of errors at all pressures and temperatures. Calibration is traceable to NIST. (2) Tighter accuracy available on some models. Consult factory. (3) Exposure to overpressure will not permanently affect calibration or accuracy of unit. Exceeding burst pressure may result in media escape. Mechanical Shock tested per MIL-STD-883D, M2002.3, Cond. B. Vibration tested per MIL-STD-883D, M2007.2, Cond. A. (4) CE Mark per IEC 61326. See www.ssec.honeywell.com/pressure/datashets.html for information on test levels and results. Connector MIL-C-26482, Shell Size #10, 6-pin #20 size. (5) User configurable. (6) Demonstration kit includes unit, power supply/data cable (120V), demonstration software, and user manual.

CASE OUTLINE



ORDERING INFORMATION

PPTR Precision Pressure Transducer - Ruggedized

FULL SCALE PRESSURE RANGE

| | Absolute | Gauge |
|------|----------|----------|
| 0015 | 15 PSI | n/a |
| 0020 | 20 PSI | 20 PSI |
| 0040 | 40 PSI | 40 PSI |
| 0100 | 100 PSI | 100 PSI |
| 0300 | 300 PSI | 300 PSI |
| 0500 | 500 PSI | 500 PSI |
| 1000 | 1000 PSI | 1000 PSI |
| 1500 | 1500 PSI | 1500 PSI |
| 3000 | 3000 PSI | 3000 PSI |

TYPE

A Absolute

G Gauge

P1 Pressure

0(vacuum) to FS

Reference to FS

P2 Pressure

N/A

Reference

P1 PRESSURE CONNECTION

P ¼ - 18 NPT (internal)

OUTPUTS

2V RS-232 digital, 0-5V analog

5V RS-485 digital, 0-5V analog

ELECTRICAL CONFIGURATION AND CONNECTION

B 6-pin connector⁽⁴⁾

D ½ - 14 NPT external w/4ft pigtail cable

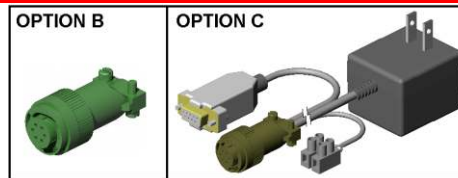
OPTIONS

A Demonstration Kit⁽⁶⁾ (RS-232 only)

B Mating Connector – for 6-pin connector version

C Power Supply/Data Cable – for 6-pin connector version (RS-232 only)

PPTR 0500 A P 2V B -A



Find out more

For more information on Honeywell's Precision Pressure Transducers visit us online at www.honeywell.com/pressuresensing or contact us at 800-323-8295 or 763-954-2474. Customer Service Email: ps.customer.support@honeywell.com.

Honeywell reserves the right to make changes to improve reliability, function or design. Honeywell does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights nor the rights of others. Covered by one or more of the following US Patents: 4,918,992, 4,788,521 and 5,948,988.

Honeywell Aerospace
Honeywell International Inc.
12001 Highway 55
Plymouth, MN 55441
www.honeywell.com

ADS-14180
June 2009
©2009 Honeywell International Inc.

Honeywell